

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/067, 910 04/28/98 VAN OVERVELD

C PHN. 16.341

WM51/1025

 EXAMINER

CORPORATE PATENT COUNSEL
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ART UNIT	PAPER NUMBER
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2671

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DATE MAILED: 10/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 09/067,910	Applicant(s) Van Overveld et al.
Examiner Philip H. Stevenson	Group Art Unit 2671

Responsive to communication(s) filed on Jul 18, 2000

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quay* 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

Claim(s) 1-11 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 1-11 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 13

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

1. Claims 1-11 are pending in the application.
2. Amendment filed July 18, 2000 was considered in preparing this action.
3. The information disclosure statement filed July 18, 2000 has been considered.

Specification

4. The disclosure is objected to because of the following informalities: On page 4, line 16, line 18 Applicants refer to points “19a,b” when no such numbers occur in the drawings.

For this and other errors, appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, and 8 rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over CHEN (Chen et al. 1993. “View Interpolation for Image Synthesis”, Proceedings 20th Annual conference on Computer Graphics. ACM. pages 279-286).

- a. CHEN describes computing a respective model for each input image, the respective model comprising information about surface patches located in the space of the scene, substantially each surface patch corresponding to a respective set of pixels in the respective input image; (page 2, left column, lines 14-21), determining for each model which points from the

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surface patches are visible and selecting the output point from the respective points on the basis of comparison of parameters of the surface patches, and determining the pixel value from the image information in the input image corresponding to the respective model from which the output point is selected use of models (page 3, left column, lines 46-61).

b. Claims 1 and 8 rejected as it would have been obvious to one of skill in the art at the time of the invention since CHEN teaches the computational advantages of his method over other rendering methods for generating new simulated views.

c. Claims 2 rejected per claim 1 and that CHEN discloses using depth to discriminate between values of two-separate models for calculation of a pixel value (page 3, right column, lines 23-39).

7. Claims 4-7, 9, 10 and 11 rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN.

a. Claim 4 rejected per claim 1 and that correspondence of size of an output pixel back-projected onto a model surface pixels(=texels) is well-known in texture mapping.

b. Claim 5 and 10 rejected per claims 1 and 8 respectively as it recites scan-conversion of the models into pixel spans which is well-known in the graphic software arts.

c. Claims 7 and 11 rejected per claim 1 and 8 respectively and that these claims merely recite adding further images to an image set such that different images are used to generate the output image when a particular viewpoint is reached, i.e. when a distance to the further models is less than the distance to the present models.

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d. Claims 6 and 9 rejected per claims 1 and 8 respectively and that light source designation and determining lighting effects are well-known in the art.

8. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN as applied to claim 1 above, and further in view of DEBEVEC (Debevec et al. Modeling and Rendering Architecture from Photographs: A hybrid geometry- and image-based approach". Computer Graphics Proceedings. Annual Conference, 1996.).

a. DEBEVEC discloses using the viewing angle to select which one of a set images are mapped to a model surface for viewing, in which the image whose original normal vector is closest to the present viewing angle is chosen (page 17, left column, lines 36-40).

b. It would have been obvious to one of skill in the art at the time of the invention to combine DEBEVEC with CHEN because DEBEVEC teaches the improvement in model realism to be achieved by using images whose surface normal is closest to axis of the present viewing angle when rendering a model.

Response to Arguments

9. Applicant's arguments filed July 18, 2000 have been fully considered but they are not persuasive. Applicant suggests that CHEN does not disclose computing a respective model. CHEN does disclose creating a model of the scene in terms of pixels with range data whereas Applicant relies on the term model to include features which are not recited in the claims, i.e. features distinguishing Applicant's model over CHEN's.

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10. Applicant further relies on the meaning of the phrase “set of pixels” to mean a plurality of pixels while common usage of set generally means number of items equal to zero or greater. Patches comprising one pixel would be included in the meaning of Applicants term and are effectively disclosed by CHEN.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

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(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington.

VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Stevenson whose telephone number is (703) 306-5421. He can normally be reached Monday-Thursday from 8:30am-7:00pm.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached on (703) 305-9798.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2671.

10 (201014)

Mark Zimmerman

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2700
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